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## Search History

**DATE: Monday, March 31, 2003** Printable Copy Create Case

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| *DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=AND* | | | |
| L4 | L1 and (osmagent or osmo$) | 54 | L4 |
| L3 | L1 and potassium adj sulfate | 7 | L3 |
| L2 | L1 and osmolyte | 1 | L2 |
| L1 | sodium adj channel adj blocker | 342 | L1 |

END OF SEARCH HISTORY

L7 ANSWER 42 OF 44 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1996:289167 BIOSIS
DOCUMENT NUMBER: PREV199699011523
TITLE: Effect of **hypertonic** saline, amiloride, and cough on mucociliary clearance in patients with **cystic fibrosis**.
AUTHOR(S): Robinson, Michael; Regnis, Jeffrey A.; Bailey, Dale L.; King, Malcolm; Bautovich, George J.; Bye, Peter T. P. [Reprint author]
CORPORATE SOURCE: Respiratory Investigation Unit, Level 10, Page Chest Pavilion, Royal Prince Alfred Hosp., Missenden Road, Camperdown, NSW, Sydney 2050, Australia
SOURCE: American Journal of Respiratory and Critical Care Medicine, (1996) Vol. 153, No. 5, pp. 1503-1509.
ISSN: 1073-449X.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 25 Jun 1996
Last Updated on STN: 25 Jun 1996

AB In patients with **cystic fibrosis** (CF), dehydration of airway secretions leads to a decrease in mucociliary clearance (MCC). We examined the acute effect on MCC of a single administration by aerosolization of **hypertonic** saline (7%) (HS), amiloride (0.3% in 0.12% NaCl) (AML) and a combination of AML and HS (AML + HS) in 12 patients with CF using a radioaerosol technique. Isotonic saline (0.9%) (IS) was used as a control solution. As both the AML and HS solutions induced cough in some patients, the last nine patients studied also underwent a cough clearance day. This was to eliminate the possible confounding effect of cough on MCC measurement. Patients ranged from 18 to 28 yr (mean +- SD, 22 +- 3) with an FEV-1 of 27 to 112% predicted (61 +- 30%). Following deposition of the radioaerosol, baseline clearance was assessed for 30 min. This was followed by a 30-min intervention period. Assessment of post-intervention clearance for a further 30 min was then performed. Comparison of the amount of radioaerosol cleared from the right lung was made at 60 min (%C60) and 90 min (%C90) using repeated measures ANOVA. The percent cleared at 60 and 90 min was significantly increased with HS (%C60 = 26.5%, %C90 = 29.4%) and the combination of AML + HS (%C60 = 23.1%, %C90 = 27.4%) compared with both IS (%C60 = 14.7%, %C90 = 17.5%) and COUGH (%C60 = 18.0%, %C90 = 19.5%), p lt 0.01. Inhalation of **hypertonic** saline is a potentially useful **treatment** in patients with **cystic fibrosis**.

L7 ANSWER 37 OF 44 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2001:550163 BIOSIS
DOCUMENT NUMBER: PREV200100550163
TITLE: Comparison of **hypertonic** saline and alternate-day or daily recombinant human deoxyribonuclease in children with **cystic fibrosis**: A randomised trial.
AUTHOR(S): Suri, Ranjan [Reprint author]; Metcalfe, Christopher; Lees, Belinda; Grieve, Richard; Flather, Marcus; Normand, Charles; Thompson, Simon; Bush, Andrew; Wallis, Colin
CORPORATE SOURCE: Respiratory Unit, Great Ormond Street Hospital for Children NHS Trust, 6th Floor, Cardiac Wing, London, WC1N 3JH, UK suriranjan@hotmail.com
SOURCE: Lancet (North American Edition), (October 20, 2001) Vol. 358, No. 9290, pp. 1316-1321. print.
ISSN: 0099-5355.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 21 Nov 2001
Last Updated on STN: 25 Feb 2002

AB Background Daily recombinant human deoxyribonuclease (rhDNase) is an established but expensive **treatment** in **cystic fibrosis**. Alternate-day **treatment**, if equally effective, would reduce the drug cost. **Hypertonic** saline improved lung function to the same degree as rhDNase in short-term studies. We compared the effectiveness of daily rhDNase, **hypertonic** saline, and alternate-day rhDNase in children with **cystic fibrosis**. Methods In an open cross-over trial, 48 children were allocated in random order to 12 weeks of once-daily rhDNase (2.5 mg), alternate-day rhDNase (2.5 mg), and twice-daily 5 mL 7% **hypertonic** saline. The primary outcome was forced expiratory volume in 1 s (FEV1). Secondary outcomes were forced vital capacity, number of pulmonary exacerbations, weight gain, quality of life, exercise tolerance, and the total costs of hospital and community care. Findings Mean FEV1 increased by 16% (SD 25%), 14% (22%), and 3% (21%) with daily rhDNase, alternate-day rhDNase, and **hypertonic** saline, respectively. There was no difference between daily and alternate-day rhDNase (2% (95% Cl -4 to 9), p=0.55). However, daily rhDNase showed a significantly greater increase in FEV1 than **hypertonic** saline (8% (2 to 14), p=0.01). The average difference in 12-week cost between daily and alternate-day rhDNase was pnd513 (95% Cl -546 to 1510) and that between daily rhDNase and **hypertonic** saline was pnd1409 (440 to 2318). None of the secondary clinical outcomes showed significant differences between **treatments**. Interpretation **Hypertonic** saline, delivered by jet nebuliser, is not as effective as daily rhDNase, although there is variation in individual response. There is no evidence of a difference between daily and alternate-day rhDNase.

L7 ANSWER 14 OF 44 MEDLINE on STN
ACCESSION NUMBER: 2000008629 MEDLINE
DOCUMENT NUMBER: 20008629 PubMed ID: 10543292
TITLE: The effect of inhaled mannitol on bronchial mucus clearance in **cystic fibrosis** patients: a pilot study.
AUTHOR: Robinson M; Daviskas E; Eberl S; Baker J; Chan H K; Anderson S D; Bye P T
CORPORATE SOURCE: Respiratory Investigation Unit, Royal Prince Alfred Hospital, Sydney, Australia.
SOURCE: EUROPEAN RESPIRATORY JOURNAL, (1999 Sep) 14 (3) 678-85. Journal code: 8803460. ISSN: 0903-1936.
PUB. COUNTRY: Denmark
DOCUMENT TYPE: (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY DATE: Entered STN: 20000113
Last Updated on STN: 20000113
Entered Medline: 19991202

AB It has been postulated that **hypertonic** saline (HS) might impair the antimicrobial effects of defensins within the airways. Alternative non-ionic osmotic agents such as mannitol may thus be preferable to HS in promoting bronchial mucus clearance (BMC) in patients with **cystic fibrosis** (CF). This study reports the effect of inhalation of another osmotic agent, dry powder Mannitol (300 mg), compared with its control (empty capsules plus matched voluntary cough) and a 6% solution of HS on BMC in 12 patients with **cystic fibrosis** (CF). Mucus clearance was measured using a radioaerosol/gamma camera technique. Post-intervention clearance was measured for 60 min, followed by cough clearance for 30 min. Neither mannitol nor HS improved BMC during the actual intervention period compared with their respective controls. However during the post-intervention measurement there was a significant improvement in BMC for both the mannitol (8.7+/-3.3% versus 2.8+/-0.7%) and HS (10.0+/-2.3% versus 3.5+/-0.8%). There was also a significant improvement in cough clearance with the Mannitol (9.7+/-2.4%) compared with its control (2.5+/-0.8%). Despite premedication with a bronchodilator, a small fall in forced expiratory volume in one second (FEV1) was seen immediately after administration of both the mannitol (7.3+/-2.5%) and HS (5.8+/-1.2%). Values of FEV1 returned to baseline by the end of the study. Inhaled mannitol is a potential mucoactive agent in **cystic fibrosis** patients. Further studies are required to establish the optimal dose and the long-term effectiveness of mannitol.

L7 ANSWER 22 OF 44 MEDLINE on STN
ACCESSION NUMBER: 96210192 MEDLINE
DOCUMENT NUMBER: 96210192 PubMed ID: 8630593
TITLE: Effect of **hypertonic** saline, amiloride, and cough on mucociliary clearance in patients with **cystic fibrosis**.
AUTHOR: Robinson M; Regnis J A; Bailey D L; King M; Bautovich G J; Bye P T
CORPORATE SOURCE: Respiratory Investigation Unit, Royal Prince Alfred Hospital, Sydney, Australia.
SOURCE: AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE, (1996 May) 153 (5) 1503-9.
Journal code: 9421642. ISSN: 1073-449X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199607
ENTRY DATE: Entered STN: 19960715
Last Updated on STN: 19970203
Entered Medline: 19960701

AB In patients with **cystic fibrosis** (CF), dehydration of airway secretions leads to a decrease in mucociliary clearance (MCC). We examined the acute effect of MCC of a single administration by aerosolization of **hypertonic** saline (7%) (HS), amiloride (0.3% in 0.12% NaCl) (AML) and a combination of AML and HS (AML + HS) in 12 patients with CF using a radioaerosol technique. Isotonic saline [0.9%] (IS) was used as a control solution. As both the AML and HS solutions induced cough in some patients, the last nine patients studied also underwent a cough clearance day. This was to eliminate the possible confounding effect of cough on MCC measurement. Patients ranged from 18 to 28 yr (mean +/- SD, 22 +/- 3) with an FEV1 of 27 to 112% predicted (61 +/- 30%). Following deposition of the radioaerosol, baseline clearance was assessed for 30 min. This was followed by a 30-min intervention period. Assessment of post-intervention clearance for a further 30 min was then performed. Comparison of the amount of radioaerosol cleared from the right lung was made at 60 min (%C60) and 90 min (%C90) using repeated measures ANOVA. The percent cleared at 60 and 90 min was significantly increased with HS (%C60 = 26.5%, %C90 = 29.4%) and the combination of AML + HS (%C60 = 23.1%, %C90 = 27.4%) compared with both IS (%C60 = 14.7%, %C90 = 17.5%) and COUGH (%C60 = 18.0%, %C90 = 19.5%), $p < 0.01$. Inhalation of **hypertonic** saline is a potentially useful **treatment** in patients with **cystic fibrosis**.